

## J. STATUTORY DETERMINATIONS

As explained at length below, the selected remedy **is consistent with** the requirements of Section 121 of CERCLA to:

1. Protect human health and the environment.
2. Comply with ARARs.
3. Be cost-effective.
4. Utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

Although the selected remedy does not satisfy the CERCLA's preference for treatment as a principal element of the remedy, such treatment was not considered necessary to ensure protectiveness at the 12 St.-OU4.

### 1. Protection of Human Health and the Environment

The presence of PCBs at concentrations exceeding applicable criteria and ecological and human health based threshold values in areas outside the landfill is evidence of past and on-going releases. The possibility of failure of the sides of the landfill, especially the side between the landfill and the Kalamazoo River including the former powerhouse discharge channel, is recognized as a threatened future release of PCBs into the environment. The on-going release of PCBs to the environment is occurring from the PCB-contaminated residuals, soils, and sediments located in the landfill, woodland, wetlands, adjacent property, and the former powerhouse discharge channel. The data from the Lake Michigan Mass Balance Study indicates that at least 30 kilograms per year of PCB is being discharged from the Site into Lake Michigan. This action will reduce and control the migration of PCBs from the 12<sup>th</sup> St.-OU4.

Following consolidation of the excavated material, the cap and containment system will provide a barrier that will control or eliminate the PCB exposure pathways, and will reduce precipitation infiltration through the residuals over time, thereby reducing the potential for additional leachate formation. The containment system will eliminate the erosion of contaminated material from the landfill. Engineering and institutional controls in the form of fencing and posting, along with deed restrictions, will further reduce the likelihood of human exposure to PCBs at the 12<sup>th</sup> St.-OU4.

No unacceptable short-term risks or cross-media impacts will be caused by implementation of the remedy. As mentioned above, mitigative measures will be taken during excavation and construction

activities to minimize noise and dust, siltation and contaminant release to the Kalamazoo River and surrounding community.

2. Compliance with ARARs

The selected remedy will comply with the federal and/or state ARARs (categorized as chemical-specific, location-specific, and action-specific) listed below.

a. **Chemical-specific ARARs**

Chemical-specific ARARs regulate the release of specific substances which have certain chemical characteristics. Chemical-specific ARARs typically determine the extent of cleanup at a site.

*Federal Chemical-Specific ARARs:*

**TSCA**

TSCA's PCB Remediation Waste Rule, 40 CFR § 761.61 et seq. provides cleanup and disposal options for PCB remediation waste. PCB remediation waste is that waste containing PCBs as a result of the spill, release, or other unauthorized disposal at a concentration, for purpose of this OU, equal to or greater than 50 ppm.

The Remedial Alternative selected in this ROD provides for disposal of the PCB remediation waste at this OU by means of the risk-based disposal method provided in 40 CFR § 761.61(c). This federal regulation allows the U.S. EPA Superfund Division Director, in consultation with the TSCA program under which disposal is to occur, to make a determination that a proposed disposal method will not pose an unreasonable risk of injury to health or to the environment.

Through its request for concurrence on this ROD to the U.S. EPA Superfund Division Director, in consultation with the TSCA program, the MDEQ has applied pursuant to 40 CFR § 761.61(c)(1) for approval of the proposed disposal method, i.e. consolidation of the wastes and capping. During the RI/FS process for this 12<sup>th</sup> St.-OU4, the MDEQ has submitted to the U.S. EPA the information described in the notification required by 40 CFR § 761.61(a)(3), or its equivalent. The concurrence of the U.S. EPA Superfund Division Director, in consultation with the TSCA program, with the remedy selected in this ROD represents the U.S. EPA's written approval, pursuant to 40 CFR § 761.61(c)(2), of the MDEQ's application, and U.S. EPA's concurrence with the MDEQ's

conclusion that the method of disposal selected in this ROD will not pose an unreasonable risk of injury to health or to the environment.

The conclusion that the consolidation and capping disposal method proposed in this ROD does not pose an unreasonable risk of injury to human health or to the environment is supported by all of the data collected in the RI. As an initial matter, most of the contaminated materials that will be disposed of in the landfill are not, by definition, PCB remediation wastes because the level of PCB contamination is below 50 ppm. The contaminated residuals in the landfill have had the opportunity to naturally settle for many years. The base of the contaminated residuals will have had time to dewater and establish a dense low hydraulic conductivity zone. Tests show that the residuals are relatively impermeable. These factors should reduce the likelihood that leachate, if produced, can escape from the new landfill. In any event, soil investigations to be conducted during the RD phase of this remedy will establish whether leachate is present or will be generated by compressing the residuals. The risk of leachate release will be evaluated and, if hazardous leachate is present in quantities that should be addressed, this remedy provides for installation of a leachate collection system.

The proposed cap will ensure that terrestrial biota are no longer exposed to the PCB-contaminated wastes in the landfill. The sides and slopes of the landfill will be constructed to withstand flooding that statistically occurs only once in every 500 years. This construction standard, along with the buffer zone that will be created between the former powerhouse discharge channel and the landfill, should ensure that the aquatic biota in the Kalamazoo River are no longer exposed to PCB-contaminated materials eroding from the landfill area. In short, no significant reduction in long-term risks to human health and the environment would be achieved by disposing of these contaminated materials off-site. In fact, off-site disposal carries the potential of additional short-term risks to excavation and transportation personnel.

In summary, this remedial alternative will achieve the TSCA ARAR by implementing a risk-based disposal method. The disposal method selected in this ROD comprises: (1) consolidation of the PCB-contaminated materials into the existing landfill area; (2) the creation of a buffer zone between the former powerhouse discharge channel and the landfill; (3) capping of the landfill in a manner that complies with all applicable Michigan requirements; and (4) if necessary, installation of a leachate collection system.

This disposal method will pose no unreasonable risk to human health or the environment.

**CWA - Ambient Water Quality Criteria:**

This act and criteria establish monitoring requirements for the discharge of waste treatment effluents to waters of the United States. They are applicable to the surface water discharges resulting from excavation and dewatering of soils, sediments, or residuals from the former powerhouse discharge channel, wetlands, woodlands, and adjacent property.

**Federal WPCA - Toxic Pollution Standards:**

This act would be applicable to the discharge to the Kalamazoo River of water from all dewatering activities.

**State Chemical-Specific ARARs:**

Part 201, Environmental Remediation, of the NREPA provides for the identification, risk assessment, evaluation, and remediation of contaminated sites within the state; therefore, Part 201, Environmental Remediation, of the NREPA is applicable to the 12<sup>th</sup> St.-OU4. The statute and its rules provide, *inter alia*, that RAs shall be protective of human health, safety and welfare, and the environment of the state. Part 201, Environmental Remediation, of the NREPA, in particular those in Section 20120a and 20120b, specifies that a RA shall achieve a degree of protectiveness appropriate for the use of the property, in this case, the 12<sup>th</sup> St.-OU4.

Part 31, Water Resources Protection, of the NREPA establishes effluent standards in accordance with the federal WPCA and the CWA, and also establishes rules specifying standards for several water quality parameters including PCBs. Part 31, Water Resources Protection, of the NREPA, would be applicable to the discharge of water from the site to the Kalamazoo River.

**b. Location-Specific ARARs**

Location-specific ARARs are those requirements that relate to the geographical position of a site. These include:

*State Location-Specific ARARs:*

Part 115, Solid Waste Management, of the NREPA:  
Part 115, Solid Waste Management, of the NREPA contains regulations regarding the construction, operation, and closure of sanitary landfills, solid waste transfer facilities, and solid waste processing plants.

c. **Action-Specific ARARs**

Action-Specific ARARs are requirements that define acceptable treatment and disposal procedures for hazardous substances.

*Federal Action-Specific ARARs:*

**CWA:**

The CWA establishes site-specific pollutant limitations and performance standards that are designed to protect surface water quality. Types of discharges regulated under the CWA include discharge to surface water, indirect discharge to a publicly owned treatment works (POTW), and discharge of dredge or fill materials to United States waters. This act is relevant to the treatment and discharge of water to the Kalamazoo River or POTW from the dewatering operations.

**Rivers & Harbor Act:**

The Rivers & Harbor Act prohibits unauthorized obstruction or alteration of any navigable water in the United States (dredging, fill, cofferdams, etc.). It also requires that federal agencies, where possible, avoid or minimize adverse impacts of federal actions upon wetlands and floodplains. Remedial activities, which may require a permit to perform, must be conducted in such a way that they will avoid unacceptable obstruction or alteration of the Kalamazoo River channel.

**Clean Air Act:**

The Clean Air Act establishes requirements for constituent emission rates in accordance with national ambient air quality standards. Excavation and cap construction activities will be regulated by the Clean Air Act.

**TSCA:**

TSCA's PCB Remediation Waste Rule, 40 CFR, Section 761.61 provides the requirements for the disposal of PCB-contaminated wastes, and would therefore be applicable to this remedy.

*State Action-Specific ARARs:*

Part 91, Soil Erosion and Sedimentation Control, of the NREPA: This part regulates earth changes, including cut and fill activities which may contribute to soil erosion and sedimentation of surface water.

Part 91, Soil Erosion and Sedimentation Control, of the NREPA would apply to any such activity where more than one acre of land is affected or the regulated action occurs within 500 feet of a lake or stream. Part 91, Soil Erosion and Sedimentation Control, of the NREPA would be applicable to the cap construction activities since these actions could impact the Kalamazoo River, which is less than 500 feet from the 12<sup>th</sup> St.-OU4.

Part 301, Inland Lakes and Streams, of the NREPA:

Part 301, Inland Lakes and Streams, of the NREPA regulates the dredging or filling of lake or stream bottoms. Activities associated with the selected remedy, sediment removal, and berm stabilization are regulated under this part due to the proximity of the 12<sup>th</sup> St.-OU4 to the Kalamazoo River.

Part 115, Solid Waste Management, of the NREPA:

Part 115, Solid Waste Management, of the NREPA contains regulations regarding the construction, operation, and closure of sanitary landfills, solid waste transfer facilities, and solid waste processing plants.

Part 31, Water Resources Protection, of the NREPA:

Part 31, Water Resources Protection, of the NREPA establishes rules regarding water and wastewater discharges. This is applicable for discharge of waters to the Kalamazoo River. Part 31, Water Resources Protection, of the NREPA also includes the rules regarding permit requirements for discharges.

Part 55, Air Pollution Control, of the NREPA:

Rules prohibiting the emission of air contaminants in quantities which have injurious effects on human health, animal life, plant life of significant economic value, and/or property are established in Part 55, Air Pollution Control, of the NREPA. This would be applicable to excavation and cap construction activities. During the construction of the RA, the total emissions from the entire site shall comply with the secondary risk screening level (SRSL) for PCB. The SRSL for PCB based upon an incremental cancer risk of 1 in 100,000 is 0.02 ug/m<sup>3</sup> (micrograms per cubic meter) applied at the 12<sup>th</sup> St.-OU4 perimeter. At a perimeter location where the adjacent

property is an industrial property or a public roadway, Rule 225 (3)b allows for compliance with the SRSL multiplied by a factor of 10. Where the adjacent property is not an industrial property or public roadway, the perimeter location shall comply with the SRSL.

Michigan Occupational Safety and Health Act 154 (MIOsha):  
MIOsha establishes the rules for safety standards in the work place and is applicable to the remediation activities.

Part 201, Environmental Remediation, of the NREPA:  
Part 201, Environmental Remediation, of the NREPA provides for the evaluation and remediation of contaminated sites within the state. The MDEQ has determined that Part 201, Environmental Remediation, of the NREPA is applicable to the 12<sup>th</sup> St.-OU4. Part 201, Environmental Remediation, of the NREPA requires that RAs be protective of human health, safety and welfare, and the environment.

Part 303, Wetland Protection, of the NREPA:  
Regulates activities conducted in wetlands as well as mitigation of wetlands.

### 3. Cost-Effectiveness

The selected remedy for the 12<sup>th</sup> St.-OU4 has the least cost of those remedies that provides an acceptable degree of protectiveness, compared to the other alternatives evaluated formally in this ROD and informally through analysis and comparison with the alternatives considered as part of the KHL-OU3 remedy selection process. Capital costs are the direct and indirect costs and O&M costs refer to long-term, post-construction measures necessary to ensure continued effectiveness of a RA. Total net present worth cost represents the sum of money, if invested in the base year and disbursed as needed, that would be sufficient to cover costs of a remedy over its planned life (assumed to be 30 years for comparison purposes).

Alternative 2 will be effective in the long-term due to the significant reduction of the mobility of the PCBs achieved through excavation of residuals that are contiguous with the landfill and containment of these materials with the materials in the landfill.

### 4. Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The state of Michigan has determined that the selected remedy provides the

best balance in terms of long-term effectiveness and permanence, reduction of toxicity, mobility, or volume of contaminants through treatment, short-term effectiveness, implementability, and cost, taking into consideration acceptance by the U.S. EPA and the community.

The selected remedy includes excavation of residual material from the woodland, wetlands, adjacent property, and from the portion of the former powerhouse discharge channel where residuals have eroded into the channel from the landfill; relocation of these materials back into the landfill; installation and maintenance of a landfill containment system; restoration of areas affected by the RA; groundwater monitoring; gas venting and/or leachate collection systems (if necessary), and access and land use restrictions.

#### 5. Preference for Treatment as a Principal Element

The state of Michigan believes that the selected remedy is protective of human health and the environment and utilizes permanent solutions and alternative technologies to the extent practicable. The remedy, however, does not satisfy the statutory preference for treatment of the hazardous substances present as a principal element because additional treatment of the source areas of the landfill would not be practicable and too costly as compared to ensuring the long-term containment of the hazardous substance at the site.

#### 6. Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the RA to ensure that the remedy is, or will be, protective of human health and the environment.